We claim:

A peptide having an amino acid sequence selected from the group consisting of HHARL; (a) (b) NARL; $H \setminus R L I;$ (c) HARLIL; (d) HHARLCL; (e) 10 (f) ARLLL; HHARLIF; (g) THARLIL; (h) 4) ARLI; (i) ARL; (j) Sec. 432 (k) HARLCL; ARLCL; (1) ARCL; (m) MFARLIL; (n) FARLIL; (o) 20 FARLI; (p) FARL; (q) **(r)** HARLIF; ARLIF; and homologs thereof. (s) .

25 2. A composition comprising one or more peptides according to claim 1 and a carrier therefor.

consisting of:

- 3. A peptide having an amino acid sequence selected from the group
- (a) LHARLCLANFCGRNRV;
- (b) LARLCLANFCGNNNV;
- (c) CARYRTGHNARLM;

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- (d) HHARLPLANFCG;
- (e) RTGHHARLC*LANFC;
- (f) CESARYRTGHHARLC*;
- (g) DNTHARLIL;
- (h) SHHARLIL; and homologs thereof.
- 4. A composition comprising one or more peptides according to claim 3 and a carrier therefor.
- 5. A peptide having the amino acid sequence A R L I, and comprising at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.
- 6. A peptide having the amino acid sequence H A R L, and comprising at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.
- 7. A peptide having the amino acid sequence F A R L, and comprising at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.
- 8. A peptide having the amino acid sequence A R L, and comprising at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.
- 9. A peptide having the amino acid sequence A R L C, and comprising at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.
 - 10. A polymer of a Harlil peptide sequence comprising at least two repetitions of the peptide.
- A nucleic acid encoding an amino acid sequence selected from the group consisting of:
 - (a) H H A R L;

- HARL; (b) (c) HARLI; HARLIL; (d) HHARLCL; (e) (f) ARLIL; 5 HMARLIF; (g) THARLIL; (h) $A R L \$ (i) ARL; (j) HARLCL; (k) 10 **(1)** ARLCL) ARCL; (m) MFARLIL; (n) FARLIL; (o) ₩1 FARLI; 15 (p) (q) FARL; HARLIF; (r) 關 ARLIF; and homologs of such amino acid sequences. (s)
 - 12. A composition comprising one or more nucleic acids according to claim 11 and a pharmaceutically acceptable carrier therefor.
 - 13. A nucleic acid encoding an amino acid sequence selected from the group

consisting of::

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- (a) LHARLCLANFCGRNRV;
- (b) LARL &LANFCGNNNV;
- (c) $CARYR \uparrow GHHARLM;$
- (d) HHARLPLANFCG;
- (e) $RTGHHAR_{L}^{*}C*LANFC$;
- (f) CESARYRT CHHARLC*;
 - (g) DNTHHARLID

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SHHARLIL; and homologs thereof.

- 14. A composition comprising one or more nucleic acids according to claim 13 and a carrier therefor.
- 15. A nucleic acid encoding the amino acid sequence A R L I, and comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.
- 16. A nucleic acid encoding the amino acid sequence H A R L and comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.
- 17. A nucleic acid encoding the amino acid sequence F A R Land comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.
- 18. A nucleic acid encoding the amino acid sequence A R Land comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.
- 19. A nucleic acid encoding the amino acid sequence A R L C, and comprising residues encoding at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

20. An antibody which specifically recognizes a peptide sequence having an amino acid sequence selected from the group consisting of:

- (a) $HH \nearrow RL$;
- (b) HAR\(\frac{1}{4}\);
- (c) HARL
- (d) $HARL_{L}$;
- (e) HHARLCL;
- (f) ARLIL;
- (g) HHARLIF

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THARLIL;
                ARLI;
                ARL;
                HARLCL;
          (k)
          (1)
                ARLCL;
 5
                ARCL;
          (m)
                MFARLIL;
          (n)
                FARLIL;
          (o)
          (p)
                FARLI;
                FARL;
          (q)
China Min
                HARLIF;
          (r)
                ARLIF; and homologs thereof.
          (s)
          21.
                An antibody which specifically recognizes a peptide sequence having an
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    amino acid sequence selected from the group consisting of:
                LHARL CLANFCGRNRV;
          (a)
          (b)
                LARLCLANFCGNNNV;
                CARYRTGHHARLM;
          (c)
                HHARLPLANFCG;
          (d)
                RTGHHARL\C*LANFC;
          (e)
                CESARYRTGHHARLC*;
          (f)
                DNTHHARLIL;
          (g)
                SHHARLIL; and homologs thereof.
          (h)
                An antibody which specifically recognizes a peptide sequence having an
          22.
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    amino acid sequence selected from the group consisting of:
                ARLI;
          (a)
                HARL;
          (b)
                FA'RL;
          (c)
30
          (d)
                ARL; and
          (e)
                ARLC,
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wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

- 23. A mimetic of a peptide having an amino acid sequence selected from the group consisting of:
 - (a) $\backslash HHARL$;
 - (b) \H A R L;
 - (c) NARLI;
 - (d) $H \setminus ARLIL$;
 - (e) H H A R L C L;
 - (f) ARLIL;
 - (g) $HH \setminus RLIF$;
 - (h) THARLIL;
 - (i) A R L \(\)
 - (j) ARL;
 - (k) $HARL\dot{Q}L$;
 - (1) ARLCL;
 - (m) ARCL;
 - (n) MFARLIL
 - (o) FARLIL;
 - (p) FARLI;
 - (q) FARL;
 - (r) HARLIF;
 - (s) A R L I F; and homologs of such amino acid sequences.
 - 24. A mimetic of a peptide having an amino acid sequence selected from the group consisting of:
 - (a) LHARLCLANFCGRNR \V ;
 - (b) LARLCLANFCGNNNV;
 - (c) CARYRTGHHARLM;
 - (d) HHARLPLANFCG;

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- (e) RTGHHARLC*LANFC;
- (f) $CE\SARYRTGHHARLC*$;
- (g) DNTHHARLIL;
- (h) SHHARLIL; and homologs thereof.

25. A mimetic of a peptide having an amino acid sequence selected from the group consisting of:

- (a) ARLI;
- (b) HAR I.;
- (c) FARL
- (d) ARL, and
- (e) A R L C;

wherein the NTP peptide comprises at least one and up to 25 additional amino acids flanking either the 3'or 5' end of the peptide.

- 26. A method for purifying NTP from a biological sample comprising:
- (1) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of:
 - (a) H H A R L;
 - (b) HARL
 - (c) HARL
 - (d) HARLIL;
 - (e) $H H A R L \setminus C L$;
 - (f) ARLIL;
 - (g) $HHARLI\F$;
 - (h) THARLIL;
 - (i) ARLI;
 - (j) ARL;
 - (k) HARLCL;
 - (1) ARLCL;
 - (m) ARCL;
 - (n) MFARLIL;

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- (o) \ FARLIL;
- (p) \setminus FARLI;
- (q) $\backslash FARL$;
- (r) HARLIF;
- (s) A R L I F; and homologs of such amino acid sequences;
- (2) isolating the resulting Harlil peptide/NTP conjugates; and
- (3) separating NTP from the one or more Harlil peptides to obtain purified NTP.
- 27. A method for purifying NTP from a biological sample comprising:
- (1) contacting a piological sample with one or more peptides having an amino acid sequence selected from the group consisting of:
 - (a) LHARLCLANFCGRNRV;
 - (b) ARLCLANFCGNNNV;
 - (c) $C \not\models R Y R T G H H A R L M;$
 - $(d) \qquad \qquad H + ARLPLANFCG;$
 - (e) RTGHHARLC*LANFC;
 - (f) CESARYRTGHHARLC*;
 - (g) DNTHARLIL;
 - (h) SHHARLIL; and homologs thereof;
- (2) isolating the resulting Harlil peptide/NTP conjugates; and
- separating NTP from the one or more Harlil peptides to obtain purified NTP.
- 28. A method for purifying NTP from a biological sample comprising:
- (a) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of:
 - (i) ARLI;
 - (ii) HARL;
 - (iii) FARL;
 - (iv) A R L; and
 - (v) ARLC;

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wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide;

- (b) isolating the resulting Harlil peptide/NTP conjugates; and
- (c) separating NTP from the one or more Harlil peptides to obtain purified NTP.
- 29. A diagnostic test for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:
 - (1) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of:
 - (a) HHARI,
 - (b) HARL;
 - (c) HARLI;
 - (d) HARLIL
 - (e) HHARLQL;
 - (f) ARLIL;
 - (g) HHARLIF
 - (h) THARLIL;
 - (i) ARLI;
 - (j) ARL;
 - (k) HARLCL;
 - (1) ARLCL;
 - (m) ARCL;
 - (n) MFARLIL;
 - (o) FARLIL;
 - (p) FARLI;
 - (q) FARL;
 - (r) HARLIF;
 - (s) A R L I F; and homologs of such amino acid sequences;
 - (2) determining the amount of NTP present in the sample; and

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- (3) determining whether the amount of NTP present in the sample is above a threshold amount indicative of the presence of Alzheimer's Disease or other neurodegenerative disorder.
- 30. A diagnostic test for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:
 - (1) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of:
 - (a) \ LHARLCLANFCGRNRV;
 - (b) \ LARLCLANFCGNNNV;
 - (c) $\setminus CARYRTGHHARLM;$
 - (d) $\backslash HHARLPLANFCG$;
 - (e) RTGHHARLC*LANFC;
 - (f) ¢ESARYRTGHHARLC*;
 - (g) $D_{i}NTHHARLIL;$
 - (h) SHHARLIL; and homologs thereof;
 - (2) determining the amount of NTP present in the sample; and
 - (3) determining whether the amount of NTP present in the sample is above a threshold amount indicative of the presence of Alzheimer's Disease or other neurodegenerative disorder.
 - 31. A diagnostic test for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:
 - (a) contacting a biological sample with one or more peptides having an amino acid sequence selected from the group consisting of:
 - (i) ARLI;
 - (ii) HARL;
 - (iii) FARL;
 - (iv) A R L; and
 - (v) ARLC;

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide;

(b) determining the amount of NTP present in the sample; and

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- (c) determining whether the amount of NTP present in the sample is above a threshold amount indicative of the presence of Alzheimer's Disease or other neurodegenerative disorder.
- 32. A diagnostic kit for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:
 - (1) one or more peptides having an amino acid sequence selected from the group consisting of:
 - (a) $HH \nearrow RL$;
 - (b) H A R L;
 - (c) HAR 1 I;
 - (d) $H A R L \setminus I L$;
 - (e) HHARLEL;
 - (f) ARLIL;
 - (g) $HHARL\F$;
 - (h) $THARLI\L;$
 - (i) ARLI;
 - (j) ARL;
 - (k) HARLCL;
 - (1) ARLCL;
 - (m) ARCL;
 - (n) MFARLIL;
 - (o) FARLIL;
 - (p) FARLI;
 - (q) FARL;
 - (r) HARLIF;
 - (s) A R L I F; and homologs of such amino acid sequences; and
 - (2) suitable reagents.
- 33. A diagnostic kit for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:

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- one or more peptides having an amino acid sequence selected from the (1) group consisting of: (a) LHARLCLANFCGRNRV; LARLCLANFCGNNNV; (b) CARYRTGHHARLM; 5 (c) HHARLPLANFCG; (d) RTGHHARLC*LANFC; (e) CESARYRTGHHARLC*; (f) DNTHHARLIL; (g) SHHARLIL; and homologs thereof; and 10 (h) suitable readents. **(2)** 記載
 - 34. A diagnostic kit for determining the presence of Alzheimer's Disease or other neurodegenerative disorder comprising:
 - (a) one or more pentides having an amino acid sequence selected from the group consisting of:
 - (i) ARLI;
 - (ii) HARL;
 - (iii) FARL;
 - (iv) HARLI;
 - (v) ARLC;

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide; and

- (b) suitable reagents.
- 35. A method of using a peptide as an analogue for NTP in a therapeutic or diagnostic assay, comprising replacing NTP with the peptide in such an assay, wherein the peptide has an amino acid sequence selected from the group consisting of:
 - (a) HHARL;
 - (b) HARL;
 - (c) HARLI;
 - (d) HARLIL;

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- (e) \backslash HHARLCL;
- (f) $\backslash ARLIL$;
- (g) $\backslash H H A R L I F$;
- (h) THARLIL;
- (i) ARLI;
- (j) $A \setminus R L$;
- (k) $H \nearrow R L C L$;
- (1) ARLCL;
- (m) ARCL;
- (n) MFÅRLIL;
- (o) FARLIL;
- (p) $FAR \coprod I$;
- (q) FARL;
- (r) $HARLI\F$;
- (s) A R L I F; and homologs of such amino acid sequences.
- 36. A method of using a peptide as an analogue for NTP in a therapeutic or diagnostic assay, comprising replacing NTP with the peptide in such an assay, wherein the peptide has an amino acid sequence selected from the group consisting of:
 - (a) LHARLCLANFCGRNRV;
 - (b) LARLCLANFCGNNNV;
 - (c) CARYRTGHHARLM;
 - (d) HHARLPLANFCG;
 - (e) RTGHHARLC*LANFC;
 - (f) CESARYRTGHHARLC*;
 - (g) DNTHHARLIL;
 - (h) SHHARLIL; and homologs thereof.
- 37. A method of using a peptide as an analogue for NTP in a therapeutic or diagnostic assay, comprising replacing NTP with the peptide in such an assay, wherein the peptide has an amino acid sequence selected from the group consisting of:

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- (a) ARLI;
- (b) A A R L;
- (c) $F \nmid R L$;
- (d) A R L, and
- (e) A $\mathbb{R} L C$;

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3'or 5' end of the peptide.

- 38. A method of using a peptide as a trap material in a diagnostic or therapeutic assay, wherein the peptide has an amino acid sequence selected from the group consisting of:
 - (a) $H H \setminus A R L$;
 - (b) HARL;
 - (c) H A R L I;
 - (d) $HAR \L IL$;
 - (e) H H A R L C L;
 - (f) ARLIL
 - (g) $H H A R L \setminus I F$;
 - (h) THARLLL;
 - (i) ARLI;
 - (j) ARL;
 - (k) HARLCL;
 - (1) ARLCL;
 - (m) ARCL;
 - (n) MFARLIL;
 - (o) FARLIL;
 - (p) FARLI;
 - (q) FARL;
 - (r) HARLIF;
 - (s) A R L I F; and homologs of such amino acid sequences.

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39.	method of using a peptide as a trap material in a diagnostic or
therapeutic assa	y, wherein the peptide has an amino acid sequence selected from the
group consisting	gof:

- (a) LHARLCLANFCGRNRV;
- (b)\ LARLCLANFCGNNNV;
- (c) \setminus CARYRTGHHARLM;
- (d) \ HHARLPLANFCG;
- (e) \backslash RTGHHARLC*LANFC;
- (f) \ CESARYRTGHHARLC*;
- (g) \setminus DNTHHARLIL;
- (h) SHHARLIL; and homologs thereof.
- 40. A method of using a peptide as a trap material in a diagnostic or therapeutic assay, wherein the peptide has an amino acid sequence selected from the group consisting of:
 - (a) ARLI;

- (b) HARL;
- (c) FARL;
- (d) A R L, and
- (e) ARLC;

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

- 41. A method of isolating immunoglobulins from a sample using a peptide comprising:
 - (1) contacting a sample comprising immunoglobulins with at least two peptides to allow for immunoglobulin/ peptide interaction; and

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- isolating the resulting peptide/immunoglobulin conjugates, wherein the peptide has an amino acid sequence selected from
- 30 the group consisting of:
 - (a) H H A R L;
 - (b) H A R L;
 - (c) HARLI;



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- (d) HARLIL;
- (e) HHARLCL;
- (f) \setminus ARLIL;
- (g) \setminus HHARLIF;
- (h) $\backslash THARLIL$;
- (i) ARLI;
- (j) $\lambda R L$;
- (k) $H \setminus A R L C L$;
- (1) ARLCL;
- (m) AR/CL;
- (n) MFARLIL;
- (o) FARLIL;
- (p) F A R L I;
- (q) FARL;
- (r) HARLIF;
- (s) A R L I F; and homologs of such amino acid sequences.
- 42. The method of claim 41, wherein the NTP peptide/immunoglobulin conjugates are isolated by precipitation.
- 43. The method of claim 41, wherein the NTP peptide/immunoglobulin conjugates are isolated on an affinity column.
- 44. The method of to claim 41, wherein the immunoglobulins are subsequently purified.

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A method of isolating immunoglobulins from a sample using a peptide

- (1) contacting a sample comprising immunoglobulins with at least two peptides to allow for immunoglobulin/peptide interaction; and
- isolating the resulting peptide/immunoglobulin conjugates, wherein the peptide has an amino acid sequence selected from the group consisting of:

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- (a) THARLCLANFCGRNRV;
- (b) L\ARLCLANFCGNNNV;
- (c) CARYRTGHHARLM;
- (d) HHARLPLANFCG;
- (e) RTGHHARLC*LANFC;
- (f) CESARYRTGHHARLC*;
- (g) DNTH HARLIL;
- (h) SHHARLIL; and homologs thereof.

46. The method of claim 45, wherein the peptide/immunoglobulin conjugates are isolated by precipitation.

- 47. The method of claim 45, wherein the peptide/immunoglobulin conjugates are isolated on an affinity column.
- 48. The method of to claim 45, wherein the immunoglobulins are subsequently purified.

49. A method of isolating immunoglobulins from a sample using a peptide

comprising:

(a)

contacting a sample comprising immunoglobulins with at least two peptides to allow for immunoglobulin/ peptide interaction; and

(b) isolating the resulting peptide/immunoglobulin conjugates, wherein the peptide has an amino acid sequence selected from the group consisting of:

(a) A R L I

- (b) H A R L;
- (c) FARL;
- (d) ARL; and
- (e) ARLC;

wherein the peptide comprises at least one and up to 25 additional amino acids flanking either the 3' or 5' end of the peptide.

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- 50. The method of claim 49, wherein the peptide/immunoglobulin conjugates are isolated by precipitation.
- 51. The method of claim 49, wherein the peptide/immunoglobulin conjugates are isolated on an affinity column.

- 52. The method according to claim 49, wherein the immunoglobulins are subsequently purified.
- 10 53. A method for preventing NTP interacting through the Harlil domains comprising blocking one or more Harlil domains by use of one or more Harlil peptides, Harlil peptide mimetics, antibodies to such a domain, or a combination thereof.